Company Divestment: Applicability of Existing IT Governance Frameworks

Annamaré Wolmarans[a,1], Neels Kruger[a,2], Neil Croft[a,3]

[a] University of Pretoria, Private Bag X20, Hatfield and 0028, South Africa
[1] *annamare.wolmarans@exxaro.com;* [2] *neels.kruger@up.ac.za;* [3] *neil.croft@up.ac.za*

ARTICLE INFO	ABSTRACT
	The successful accomplishment of a divestiture is generally calculated by the dimension of accomplishment in realizing the elemental strategic goal that the company set out to achieve when adopting a divestment strategy. The paper will highlight the substantial role that IT has to fulfil in bringing company divestment to completion by investigating if any one of the existing IT Governance frameworks and standards could be implemented or adopted to serve as a managerial and governance framework towards company divestment. The IT department has a fundamental function to fulfill in the disentanglement of systems and IT infrastructure. In order to achieve this goal it is imperative to have a well-defined IT governance framework to guide the disentanglement processes and ensure the smooth execution of the IT divestment process.

I. Introduction

Establishing company objectives for IT is described as best practice for IT Governance. IT has emerged as a primary enabler to virtually all business metamorphosis and the application of IT directly influences the achievement of the company's vision, mission and strategic goals. Governance may compose strategic ideas for deliberation as potential initiatives and provide preconditions regarding strategy alignment, IS/IT portfolio suitability and internal business process priorities [1].

Ratifying a governance structure does not imply that the company has efficiently and adequately actualized a governance structure aligned with IT which will support and improve the business. IT Governance schedules define the resolutions, the intentness by different collaborators, and the structures, processes, maturity and other methods needed to come to conclusions. This comprises the construction of the correct ability and competency to support the making of decisions to aid the achievement of alignment, management of risks and enablement of change to dispense and dispatch excellent IT services and control service cost. IT Governance consist of defining the rules and constructing the proficiency to run IT to create value for stakeholders [2].

Contemporary IT policy makers and business managers countenance unpredictability typified by the absence of pertinent, workable admonishment and standards to govern the company through this unfamiliar business upheaval. Companies will reap a number of benefits when emulating a canonical IT governance framework. An array of canonical IT governance frameworks and divergent evaluation mechanisms for the evaluation of IT's significance and attainment have emerged. A number of intermediaries evolved into protocols, others into mechanisms or best practices [3].

The study will establish the hypothetical logical theories and their associations with and relevance to the function of IT governance frameworks in company divestment or mine closure. Levy & Ellis portray the literature examination as compelling and probable investigative measures subsequent to an *"input-processing-output"* approach. Reference [4] noted that *"A thorough, sophisticated literature review is the foundation and inspiration for substantial, useful research."* Reference [5] defines a literature review as *"a written document that presents a logical argued case founded on a comprehensive understanding of the current state of knowledge about a topic of study. This case establishes a convincing thesis to answer the study's question."* The literature examination for this research aims to methodically measure theoretical and abstract correlations and reliance between distributed and promulgated research literatures. A compelling literature review will accrue an authentic vindication for choosing this research methodology.

II. IT Governance in Theory

According to [6] the progression of IT governance occurs at the junction of, and in reaction to, corporate proceedings and an inconstant environment. Corporate practice symbolize the adoption to practice that materialize as a result of participants learning to function, within IT governance, to accomplish their petitioned aspirations, and which might be in conflict with the company's aspirations. The 'changing environment' invoke the continuously shifting company environment within which IT governance is established, the dynamic skills set mandatory within IT and the encumbrance that the volatile environment spawn for employees. The mixture of the corporate practices that have evolved over time and the contemporary encumbrances spawned from a dynamic environment caters for the evolvement of IT governance. The evolvement of IT governance in turn envelopes the evolution of IT governance for a specific company and circumstances that have impacted IT governance to mature.

A number of factors have been identified as having the potential to impact the implementation and maintenance of IT governance within a specific company. The success of IT governance is dependent on mental analysis of, and apt with, company and social circumstances and the validity of the structures, processes and instruments of IT governance. Unified elements such as intricacy of communications between groups of managers and associates can effect outcomes.   It is vital for companies to realize that IT should rather be governed through superintendence and joint effort rather than by the deception of controls [7].

An IT governance framework objective is to incorporate the accord of experts into a standardized best-practices document. Aforementioned framework can then be utilized as a well-defined step-by-step concept to create and implement IT governance, or aspects thereof, in a specific company. The benediction of applying an IT governance framework include [8]:

- Briefer implementation period
- Decreased costs
- A configured evolution process
- Better quality end products

Not with standing, an imbalance notorious as the IT gap, has been conceived emanated from the difference in understanding between business and IT management and culminated in a misalignment between IT foundations to a company's business prospects and a disorganized IT governance system [9].

III. Existing IT Governance Frameworks and Standards

Routinely, a framework is a genuine or abstract structure designed to suffice as an aid or catalog for the construction of something that broadens the structure into something useful.   A framework is commonly more inclusive than a protocol and more authoritarian than a structure. A framework is an expansive overview or summary of intertwined items which backs up a specific resolution to a particular objective, and suffice as a guide that can be adapted by adding or deleting items.

Standards are customarily or universally acknowledged, concurred, or established mechanisms of establishing what something should be. Principle allotments of this term include: a concept, benchmark, or convention developed by concurrence, authority, or habitual action, and applied as a precedent or model to equate or measure the characteristics or efficiency of a practice or procedure. And a drafted explanation, confine or principle approved and monitored for conformity by an authentic dependable agency (or professional recognized body) as a merest tolerable benchmark.

A. ITIL

According to [10] IT Infrastructure Library (ITIL) is described as *"a set of best practices to manage existing services in the most effective and efficient manner"* and as a *"process-based approach to IT activity"* [11]. ITIL is essentially an instrument applied by business to enhance current IT services to ensure alignment with the business strategy to guarantee IT serves as a facilitator of modernization to support the business in their strive to become market pacesetters and maintain the company's competitive advantage. According to [12] *"ITIL has the ability to impact business strategy and support it, but not shape it."* It has the ability to embellish strategy and in addition ITIL can influence organizational infrastructure considerable. To a smaller measure it also has an influence on business processes. ITIL thus possesses the ability to promote alignment. Universally IT services act in a supportive role for business to ensure the accomplishment of the business strategies and goals and support business maturity. ITIL applies IT as a promotor and driver for business to identify and acknowledge new inventiveness and initiatives.

ITIL will guarantee the alignment of the IT and business strategies. It will inspire the IT department to obtain a better comprehension of business requirements and to provide IT infrastructure, systems and services which are collectively synchronous with the business strategy.   ITIL contributes IT service

management with a foundation that will facilitate better fraternization among business actors and IT departments by way of alliances and cooperation [10]; [13].

The ITIL foundation is an array of best practices which are in line with the ISO/IEC 2000 standard for IT Service Management. ITIL furnishes the business with direction and advice on the topic of optimally structuring IT services to aid in bolstering their business processes, but does not furnish a mechanism to calculate or judge conformity to the ITIL service delivery foundation.

B. Cobit

CobiT®, Control Objectives for Information & related Technology, is described by [14] as *"a tool set which helps business managers to understand and manage the risks associated with implementing new technologies"* and it is based on international best practices in IT Management and control. CobiT® describe governance as follow: *"Governance ensures that stakeholder needs, conditions and options are evaluated to determine balanced, agreed-on enterprise objectives to be achieved; setting direction through prioritization and decision making; and monitoring performance and compliance against agree-on direction and objectives".* This description appreciates numerous stakeholders of the business's IT and the equilibrium of resource allocation while cultivating the comprehensive business goals. It furnishes the business with a distinct all including foundation for all the IT processes which delineates high level control objectives and incorporates management instructions to derive maximum value from IT. The function of CobiT® is to act as an unified comprehensive governance model for managing the company's Information Technology [15]. Furthermore, CobiT® undertakes to explain and simplify the boundaries between governance and management and form a concept of IT governance as "evaluate, direct and monitor (EMD)" processes which demonstrates a significant intensity of internal reliance.

The CobiT® framework embody the thorough life cycle of IT investment, from the routine strategic planning to the prosaic operations of the IT function. CobiT®'s *Management Guidelines* includes the maturity models for each of the 34 IT processes. CobiT® influences process maturity theories as a foundation of IT Governance implementation. Maturity modelling enables the company to identify the short comings within their capabilities and for action plans to be formulated to address these capability gaps. The primary intend of CobiT® involve the evolution of straightforward policies and exceptional practices for security and control in IT to ensure global ratification by all companies and organizations. The objective of CobiT® is explore, create, make available and bolster a dependable information technology control objectives for every day application by both company managers and auditors [8, 13, 22].

C. TOGAF

TOGAF – The Open Group Architecture Framework – aspires to integrate business or enterprise and IT-architecture to eventually promote the adeptness of IT and improve cost effectiveness. Reference [16] defines enterprise architecture as *"a complete expression of the enterprise; a master plan which acts as collaboration force between aspects of business planning such as goals, vision, strategies and governance principles; aspects of business operations such as business terms, organization structures, processes and data; aspects of automation such as information systems and databases; and the enabling technological infrastructure of the business such as computers, operating systems and networks."* Reference [17] describes TOGAF as *"a comprehensive architecture framework and methodology which enables the design, evaluation and implementation of the right architecture for an enterprise."*

TOGAF is a gradual approach for the development of an enterprise architecture, through the application of a set of arbitrary methods. It is available at no cost on the Open Group website and the first version was established in 1995 by the US Department of Defense. TOGAF attempts to be a path to accelerated architecture evolution and compelling governance. It does not stipulate which standards and designs should be applied for architecture illustration, it directs the mechanism when architecture is constructed and it endorse and promote all levels of architecture. The purpose of TOGAF is to facilitate with Enterprise Architecture Management (EAM) and as a framework its role is to assist with the documentation, planning and analyzing of existing Enterprise Architectures and to provide guidelines when building new Enterprise Architecture. The framework furthermore expedite measures to expose and limit verbosity, escalate uniformity and influence possibility to rehash infrastructure. It afford techniques and advocating resources to promote business efficiency by developing appropriate Enterprise Architectures and is the most distinguished and dependable enterprise architecture standard. TOGAF is one of the most expansive and comprehensive frameworks for Enterprise Architecture Management, is readily attainable and sufficiently documented [18].
ISO

1) ISO/IEC 20000 IT Service Management

In accordance with [19] the expanding prominence of IT services in contemporary civilization has directed the necessity for excellence in the formulation of services. Customers and consumers of IT service companies are progressively pressing for more preserved, efficiently optimized services. This client difficulty and the sophistication of technology necessitates a deviation in focus from technology focused operations to

a transparent service antecedent. In a directive to address this business requirement, the curriculum familiar as *Information Technology Service Management* (ITSM) has been refined and bolstered. An array of management standards have been encapsulated in this foundation, whether they be explicit or existing. ISO 20000 is the IT Service Management standard which provides business with a set of IT service delivery requirements that need to be accomplished in order to obtain ISO 20000 certification. According to [20] the main objective of this standard is *"To provide a management system, including policies and a framework to enable the effective management and implementation of all IT services".*

2) ISO/IEC 27001 Information Security Controls & ISO/IEC 27002 Code of Practice

ISO/IEC 27001 and ISO/IEC 27002 (formerly known as ISO 17799) is an internationally recognized Information Security Management Standard. According to reference [21] ISO/IEC 27001 defines information as *"...an asset that may exist in many forms and has value to an organization".* The purpose of the standard is the safeguarding of information to ensure business continuity and decrease business disturbance by way of the conservation of reticence, confidentiality, probity and availability of business information. A fundamental facet of IT governance is the conservation of business information which resulted in the emergence of this standard to form the cornerstone of an effective governance foundation [9].

3) ISO/IEC 38500 Corporate Governance of Information Technology

The standard consists of a framework for good corporate governance of IT and prescribes six principles to guide IT governance sanctioned behavior to support decision making. The principles include guidelines for conspicuously comprehension of IT responsibilities; alignment of business and IT strategy is the recipe on how IT can optimally support the business and ensuring that IT is fit for the business purpose it is intended for; how to validly acquire IT; IT performance monitoring; compliance to ensure IT compliance with established rules and with all mandatory legislation and the mitigation of IT risks; and human conduct to ensure IT consider human aspects [22].

D. KING III

The role of King III is not to provide a particular set of guidelines for every company, it is rather a "principle-based document". King III asserts that it is the role of a director to make sure that cautions and vigilant actions have been taken with regard to IT governance. Boards are however in the habit of not paying sufficient attention to IT as they conventionally concentrate on business related matters such strategy, risks, ROI and accounting issues. It is rather common for IT to be regarded as an element disjointed and explicit from the business which is not managed as part of an integrated business. The justification for the inclusion of IT into the King report is the rapidly changing IT landscape and the direct impact on the business environment [23]. According to King III, IT management should deploy a robust process to recognize and exploit favorable circumstances to ameliorate the performance and sustainability of the company in accordance with the triple bottom line objectives. IT governance further contributes a framework which is the obligation of the board and should ensure the integration of IT into the business strategy in a value adding and risk mitigating way.

IV. Results and Discussion

The ITIL Framework on its own will not suffice as a mine closure or divestment framework as the main focus is on IT service delivery and management. IT infrastructure support and maintenance activities are scaled down to the bare minimum and IT support services for both infrastructure and software systems will be mostly on an ad-hoc basis in order to minimize IT related costs. ITIL will thus be an over kill and way too expensive to be considered to form part of a mine closure or divestment framework.

CobiT®, is described as the mechanism to support business managers in their decision making and to better understand the risks when new IT infrastructure and software systems are planned and implemented. It is also described as the core of IT governance implementation which embodies the total life cycle of all IT assets. The CobiT® framework as such is unfit to serve as a mine closure and divestment framework as the main focus of the framework is on the planning and deployment of new technologies and infrastructure in contrast with mine closure or divestment's down scaling and removal of IT infrastructure and software systems.

Although TOGAF is available free of charge from the TOGAF website it was found that the purpose of TOGAF is to serve as an all-inclusive architecture framework with the main purpose to provide a guideline to enable rapid architecture evolvement through the provisioning of a framework to assist with the design, evaluation and implementation of appropriate architecture. TOGAF is furthermore one of the most wide-ranging, complete and well documented frameworks for Enterprise Architecture Management. As with CobiT® the primary focus of TOGAF is on the deployment and management of new enterprise architecture and the decommissioning of enterprise architecture is not addressed within this framework, which makes the framework ill-equipped to be used during mine closure or divestment.

ISO/IEC 20000, ISO/IEC 27001 and ISO/IEC 38500 were the standards investigated to potentially form part of a mine closure or divestment framework. ISO/IEC 20000 is a standard which supports ITIL and

provides the means on how to measure service management. The goal of ISO/IEC 27001, Information Security Management standard is the safeguarding of company information against external and internal threads in order to business continuity. It strives to limit damage to the business through the maintenance of confidentiality, probity and availability of business information. The objective of ISO/IEC 38500 is the promotion and guidance for the agreeable and satisfactory use of IT within the company and is governed by the three main activities of this standard, namely regulate, assess and control. Not one of these three standards are in essence purposed to support mine closure or divestment activities.

The King III report is not an IT governance framework or standard as such, but rather an array of principles or a "principle-based" document. The crux of the King III report is to ensure that the company's IT is aligned with and supports the company's business processes and the triple bottom line objectives and that information assets are managed effectively. It prescribes the implementation of an existing IT governance framework which is most suited to the company's purpose and needs. The King III report reference framework is the current business operations and processes and the IT systems and infrastructure which support these, with no accommodation for company divestment or mine closure activities.

V. Conclusion

When looking at IT governance in theory, a number of aspects are identified which in essence could influence the deployment and maintenance of IT governance and it is essential that companies should realize that IT rather needs to be governed through guardianship and combined efforts than by deceiving controls. IT governance consist of six aspects and three elements and each of these aspects and elements support particular or several goals in the intrinsic IT governance question.

A number of IT governance frameworks are available and postulates an IT governance model which consists of numerous definitions and foundations. These frameworks have a diverse variety of strengths and weaknesses and include imbricates. Companies might consider the deployment of particular components from a number of frameworks and standards to form the company's unified and comprehensive IT governance framework. Despite the existence of a variety of protocols such as IT control frameworks, models and standards, the persisting nature is theoretical. Control frameworks tend to viewed in isolation from each other and implemented in an ad hoc approach which boils down to an inefficient IT governance system which focusses on either strategic or operational areas, but never on both simultaneously.

After investigating the most relevant and well known IT governance frameworks and standards, it became clear that not one of the existing frameworks or standards investigated meets the requirements of an IT governance framework for mine closure or divestment. All the currently available frameworks in the IT environment are management frameworks, and the most of them are generally conformed to the management processes for the provisioning and deployment of new IT infrastructure or governance mechanisms. These frameworks do not address all the concerned areas within the IT environment when moving from the limited focus on the supply, maintenance and support of IT to consider the broader question of how companies actually use, and ultimately dispose of IT when a divestment strategy is implemented and a company or business unit is closed down or carved out. The requirement clearly exist for a framework to provide guidance on dealing with the disposal aspect of IT.

References

[1] G.T. Hickman and D.H. Smaltz, "The Healthcare Information Technology Planning Fieldbook: Tactics, Tools and Templates for Building Your IT Plan," *Chicargo*: 2008, pp. 3 – 12. Available [Online]: http://www.himss.org/files/HIMSSorg/content/files/Code%2041_IT%20Planning_Hickman_Smaltz_HIMSs.pdf . Retrieved: 2 Augustus 2015.

[2] P.R. da Cunha, L.M. Martins, J.A.B. Moura and A.D. de Figueiredo, "IT Governance Practices for Electric Utilities: Insights from Brazil and Europe," Open Journal of Information Systems (OJIS), 1st ed., vol. 2, 2015, pp. 9 – 28.

[3] G. Spafford, "The Benefits of Standard IT Governance Frameworks," ITBusinessEdge, 2003, Available [Online] http://www.datamation.com/netsys/article.php/2195051/The-Benefits-of-Standard-IT-Governance-Frameworks.htm. Retrieved: 8 October 2015.

[3] D.N. Boote and P. Beile, 2005. "Scholars before researchers: On the centrality of the dissertation literature review in research preparation. Educational Researcher, 34th ed., vol. 6, 2005, pp. 3 – 15.

[4] L.A. Machi and B.T. McEvoy, "The literature review: Six steps to success," Thousand Oaks, CA: Corwin, 2009.

[4] P. Willson and C. Pollard, "Exploring IT Governance in Theory and Practice in a Large Multi-National Organisation in Australia," Information Systems Management, 26th ed., vol. 2, 2009, pp. 98 – 109.

[5]   S.K. McGinnis, L.K. Pumphrey, K.Trimmer and C. Wiggings, "Sustaining and Extending Organizational Strategy via Information Technology Governance," *Proceedings of the 37th Hawaii International Conference on System Sciences*, p. 60158, pp. 1 – 10, Big Island, Hawaii, 5 – 8 January, 2004. IEEE.

[6]   G. Steenkamp, "The applicability of using COBIT as a framework to achieve compliance with the King III Report's requirements for good IT governance," South African Journal of Accountability and Auditing Research, 11th ed., 2011, pp. 1 – 8.

[7]   R. Goosen and R. Rudman, "The development of an integrated framework in order to address King III's IT governance principles at a strategic level," S.Afr.J.Bus.Manage. 44th ed., vol. 4, 2013, pp. 91 – 103.

[8]   A. Perazzo, and G. Willis, "Bridging the Gap Between IT and Business," The IT Manager's Guide to ITIL v3, 2008, An Internet.com IT Management eBook. Jupitermedia Corp. Available [Online]: http://www.lh.ru/lhknwdb.nsf/0/53230d04ec736aaec3257609002f3f69/$FILE/itil_v3_ebook.pdf. Retrieved: 30 May 2014.

[9]   G. Kim, 2003. "Surbanes-Oxley, Fraud Prevention, and IMCA: A Framework for Effective Controls Assurance," Computer Fraud & Security, 9th ed., September 2003, pp. 12 – 16.

[10]   N. Zeinolabedin, M. Khademi and N. Rahbar, "Assessing Efficiency of ITIL Framework to Align Business and IT," Research Inventy: International Journal of Engineering and Science, 21st ed., vol. 5, 2013, pp. 13 – 26.

[11]   E. Wessels and J. Van Loggerenberg, "IT Governance: Theory and Practice," Proceedings of the Conference on Information Technology in Tertiary Education, Pretoria, South Africa. 18 – 20 September 2006.

[12]   R.J. Butler, "Applying the CobiT® Control Framework to Spreadsheets Developments. Extracted from Controlling the Subversive Spreadsheet – Risks, Audit and Development Methods," Proceedings of EuSpRIG 2001 Conference.

[13]   S. Khanyile and H. Abdullah, "COBIT 5: an evolutionary framework and only framework to address the governance and management of enterprise IT," University of South Africa. [Online] http://osprey.unisa.ac.za/TechnicalReports/Cobit5.pdf. Retrieved: 23 August 2015.

[14]   J. Schekkerman, "How to survive in the jungle of Enterprise Architecture Frameworks," Victoria: Trafford, 2004.

[15]   The Open Group: TOGAF "Enterprise Edition" Version 8.1. Available [Online] http://pubs.opengroup.org/architecture/togaf8-doc/arch/. Retrieved: 16 August 2015.

[16]   T. Meuller, D. Schuldt, B. Sewald, M. Morisse and J. Petrikina, "Towards inter-organizational Enterprise Architecture Management – Applicability of TOGAF 9.1 for Network Organizations," Proceedings of the Nineteenth American Conference on Information Systems, Chicago, Illinois, August 15 – 17, 2013, pp. 1 – 13.

[17]   S. Cots and M. Casadesús, "Exploring the service management standard ISO 20000," Total Quality Management, 26th ed., vol. 5, 2015, pp. 515 – 533.

[18]   ISO/IEC 20000:2005(E). First Edition, Information Technology – Service Management – Part 1: Specifications.

[19]   T. Carlson, "Information Security Management: Understanding ISO17799," Lucent Technologies Worldwide Services, 2001.

[20]   ISO/IEC 35800:2008(E). First Edition, Corporate governance on information technology.

[21]   R. Butler and M.J. Butler, 2010. "Beyond King III: Assigning accountability for IT governance in South African enterprises," South African Journal for Business Management, 41st ed., vol. 3, 2010, pp. 33 – 45.

[22]   Haviluddin, Rayner Alfred, Patricia Anthony. 2012. The Utilization of COBIT Framework Within IT Governance: A Study of Literature. Jakarta, Indonesia. The 2nd ACIKITA International Conference on Science and Technology (AICST). Proceeding ACIKITA, ISBN: 978-602-18102-1-7. DOI: 10.13140/2.1.3616.4160. Pg. 369-384.